

Application No. 10/609,121
Filed: June 27, 2003
TC Art Unit: 1722
Confirmation No.: 6700

AMENDMENTS TO THE CLAIMS

1. (currently amended) An injection mold having a hot-runner mold, comprising:

a cavity mold which has a gate of a sprue of a cavity in a concave formed in a bottom thereof, a peripheral portion of the gate being formed into a flat face; and

a hot-runner mold which is provided with a needle-valve-nozzle having an end face formed into a flat face, the hot-runner mold being arranged on the cavity mold with the end of the needle-valve-nozzle inserted into the concave,

wherein the nozzle includes:

a nozzle body having an opening formed in the end face of the nozzle; and

a short cylindrical tip that is formed of metal having lower thermal conductivity than the nozzle body and has a flat end face and a nozzle orifice in the center of the end face, the tip having an inner peripheral wall face extending to the nozzle orifice, the inner peripheral wall face being formed in a conical face having the same angle as the conical end portion of a needle mounted in the needle-valve-nozzle and being fitted on the end portion of the needle to close the nozzle orifice and to support the tip, the tip being slidably fitted in the opening formed in the end face of the

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nozzle in such a way that its the end face of the tip is protruded from the end face of the nozzle and directly nozzle-touched the gate of the sprue of the cavity.

2. (canceled)

3. (previously presented) The injection mold having a hot-runner mold as claimed in claim 1, wherein the nozzle body is made of steel for a mold and the tip is made of a titanium alloy having lower thermal conductivity than the steel for a mold.

4. (currently amended) The injection mold having a hot-runner mold as claimed in claim 2₁, wherein the nozzle body is made of steel for a mold and the tip is made of a titanium alloy having lower thermal conductivity than the steel for a mold.